

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P590984

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590984  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4STD-50-UNV-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

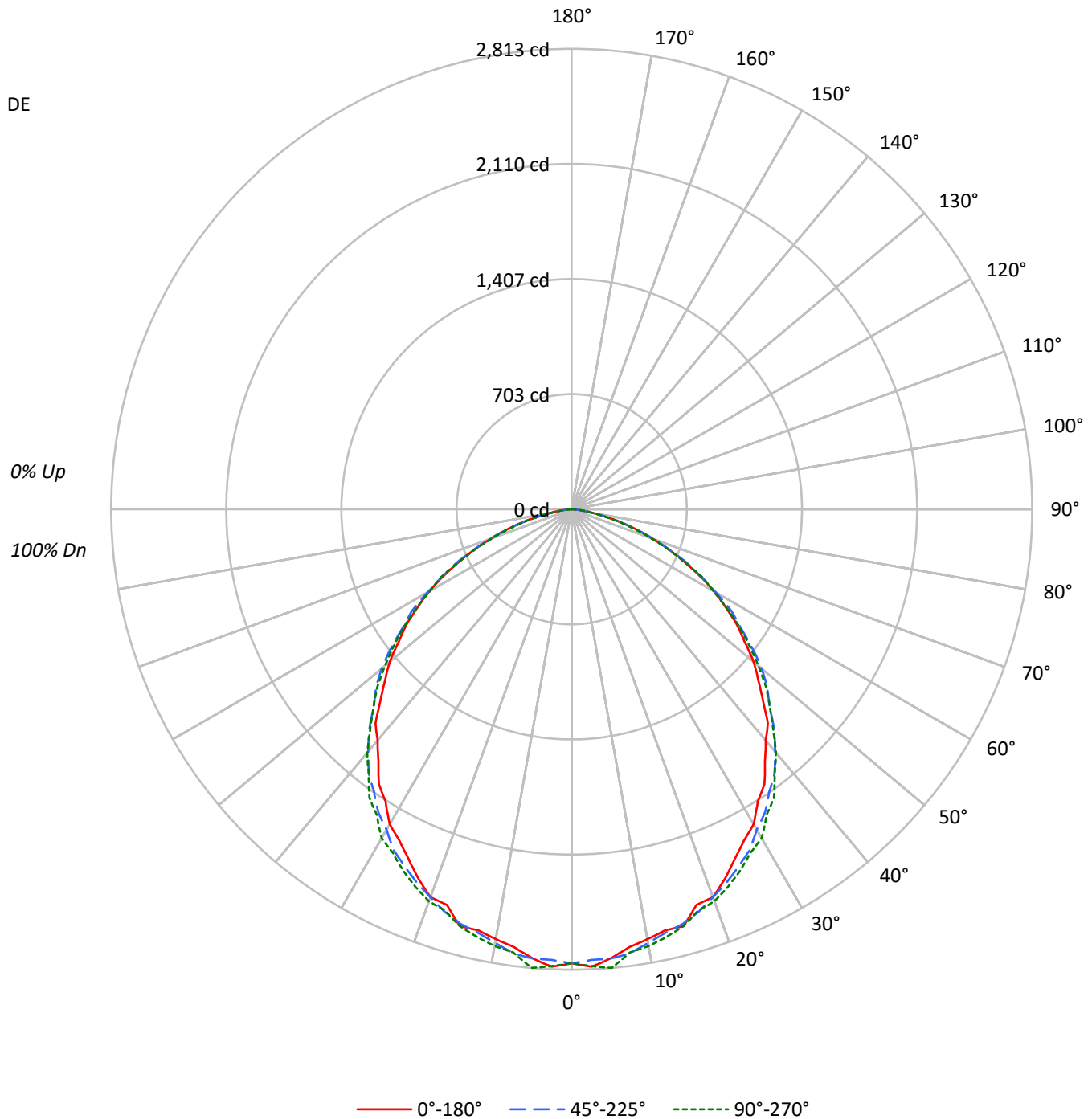
Lumens per Lamp: N/A  
Luminaire Lumens: 6990.0 lumens  
Efficiency: N/A  
Efficacy: 105.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7463	7463	7463
5°	7439	7441	7598
10°	7288	7351	7403
15°	7346	7305	7346
20°	7221	7221	7298
25°	6999	7152	7231
30°	6903	7025	7211
35°	6741	6917	7072
40°	6478	6790	6820
45°	6282	6506	6516
50°	6076	6350	6229
55°	5789	5902	5860
60°	5414	5468	5370
65°	4827	4950	4793
70°	4142	4156	4040
75°	3280	3273	3146
80°	2197	2137	2053
85°	1195	1183	1105

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6674 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	260.9	3.7
10°-20°	739.4	10.6
20°-30°	1107.7	15.8
30°-40°	1312.9	18.8
40°-50°	1315.3	18.8
50°-60°	1116.5	16.0
60°-70°	752.7	10.8
70°-80°	330.8	4.7
80°-90°	53.7	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2108.0	30.2
0°-40°	3420.9	48.9
0°-60°	5852.8	83.7
0°-90°	6990.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6990.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2774	2774	2774	2774	2774	
5°	2754	2747	2755	2747	2813	260
15°	2637	2606	2622	2636	2637	735
25°	2357	2370	2409	2440	2435	1090
35°	2052	2058	2106	2154	2153	1274
45°	1651	1682	1710	1754	1712	1277
55°	1234	1226	1258	1249	1249	1098
65°	758	748	777	748	753	754
75°	316	309	315	293	303	338
85°	39	38	38	37	36	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2773.5	2773.5	2773.5	2773.5	2773.5
2.5°	2797.4	2776.3	2756.6	2779.5	2793.5
5°	2753.8	2747.3	2754.8	2746.6	2812.8
7.5°	2697.2	2721.9	2736.2	2727.3	2731.2
10°	2667.1	2658.5	2690.4	2712.6	2709.4
12.5°	2634.9	2647.8	2649.6	2673.5	2675.7
15°	2636.7	2606.2	2622.3	2635.9	2637.0
17.5°	2534.2	2567.2	2578.3	2609.4	2570.8
20°	2521.7	2497.7	2521.7	2553.6	2548.6
22.5°	2444.7	2417.9	2469.4	2497.7	2495.9
25°	2357.3	2370.2	2408.9	2440.4	2435.4
27.5°	2280.7	2295.8	2350.9	2394.2	2366.3
30°	2221.6	2214.1	2260.7	2299.3	2320.8
32.5°	2116.0	2143.2	2197.6	2236.0	2215.5
35°	2051.9	2058.0	2105.6	2154.3	2152.9
37.5°	1939.8	1968.1	2035.1	2048.7	2036.1
40°	1844.2	1872.5	1933.0	1947.7	1941.6
42.5°	1773.7	1778.7	1830.6	1847.4	1820.6
45°	1650.8	1681.6	1709.6	1753.6	1712.1
47.5°	1546.3	1560.6	1620.7	1632.6	1610.7
50°	1451.4	1456.4	1516.9	1502.2	1487.9
52.5°	1332.1	1353.2	1387.3	1384.4	1367.6
55°	1234.0	1225.8	1258.0	1249.4	1249.0
57.5°	1116.2	1130.5	1157.0	1143.4	1121.6
60°	1005.9	1006.3	1015.9	1000.5	997.7
62.5°	883.1	887.4	889.5	870.5	901.3
65°	758.1	748.1	777.4	747.7	752.7
67.5°	643.1	648.2	645.3	626.7	633.8
70°	526.4	532.8	528.2	507.1	513.5
72.5°	419.7	411.8	416.8	390.3	402.5
75°	315.5	309.0	314.8	292.6	302.6
77.5°	214.9	219.9	216.3	204.5	211.3
80°	141.8	137.9	137.9	131.1	132.5
82.5°	82.7	78.8	77.7	75.6	78.8
85°	38.7	37.6	38.3	37.2	35.8
87.5°	14.0	14.3	14.3	13.6	12.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)